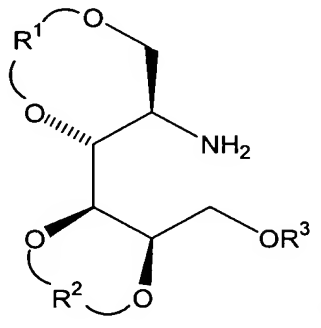
ABSTRACT

A novel method for the preparation of a compound of formula (I) from an *N*-protected-D-mannosamine. A compound of formula (I) is a useful intermediate for the preparation of kifunensine, a potent and selective mannosidase inhibitor. The method includes protecting the hydroxyl group at the C-6 position of an *N*-protected-D-mannosamine, to give a 6-*O*-protected-*N*-protected-D-mannosamine; reducing the C-1 anomeric carbon atom of the 6-*O*-protected-*N*-protected-D-mannosamine to give a 6-*O*-protected-*N*-protected-D-mannitol; protecting the four hydroxyl groups of the 6-*O*-protected-*N*-protected-D-mannitol; and removing the nitrogen atom protecting group and optionally removing the C-6 oxygen atom protecting group to give the compound of formula (I):



(I)

where R^1 and R^2 are each independently protecting groups which, together with the oxygen atoms to which they are attached, form a 5-, 6-, 7- or 8-membered ring; and R^3 is hydrogen or a protecting group.